



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,964	07/31/2001	Morihiko Minowa	FUJO 18.889	2573
26304 7590 01/10/2007 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER FILE, ERIN M	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/10/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/918,964

Applicant(s)

MINOWA ET AL.

Examiner

Erin M. File

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/29/2006 have been fully considered but they are not persuasive. The applicant contends that Arslan fails to teach removing a predefined part of the pilot signal which includes the synchronization bit. The examiner disagrees with this characterization of Arslan. Arslan teaches that the pilot clusters are estimated for the received signal and then sent to the channel estimator for removing the pilot and the hypothesized error are removed in the channel estimator, as described below, meeting the limitations of claims 1 and 11.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 11 are rejected under 35 U.S.C. 102(e) as being by Arslan et al. (U.S. Patent No. 6,775,340).

Claims 1, 11, Arslan discloses channel estimation by using the pilot signal from which a predefined part of the pilot signal is removed (fig. 3, 24, col. 3, lines 43-47), a

Art Unit: 2611

synchronization signal demodulating each bit of the synchronization signal by using a result of the channel estimation (fig. 3, 26), where the predefined part is defined for each target bit of the synchronization signal to be demodulated is defined so as to include the target bit and synchronization detection is made using the demodulated synchronization signal (fig. 5, fig. 8C, col. 3, lines 47-57).

Claim 2, Arslan further discloses the predefined part is a slot including the target bit of the synchronization signal (fig. 5, col. 3, lines 54-59).

Claim 3, Arslan further discloses channel estimating unit divides signal bits used for estimation into groups where the predefined part is group including the target bit of the synchronization signal (col. 3, lines 53-54).

Claim 4, Arslan further discloses the predefined part is the target bit (col. 3, lines 43-59).

Claim 5, Arslan further discloses said channel estimating unit also serves as a channel estimating unit for demodulating data (fig. 3, 24, 26).

Claim 7, Arslan further discloses weight coefficients, which are applied to each slot at the time of channel estimation, are varied according to reception quality information obtained from a reception quality estimating circuit (col. 6, lines 17-18).

Claim 8, Arslan further discloses weight coefficients, which are applied to each slot at the time of channel estimation, are varied according to a fading speed obtained from a fading frequency estimating circuit (col. 6, lines 17-18).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arslan et al. (U.S. Patent No. 6,775,340) as applied to claim 1 above, and further in view of Basso et al. (U.S. Patent No. 6,345,078).

Claim 10, Although Arslan fails to disclose synchronization detection made by using an output of a path having a largest correlation value among outputs of a RAKE receiver of a code division multiple access receiving device, Basso discloses a finger tracking loop (fig. 1, 20a-d) for each demodulator (fig. 1, 12a-d) of a RAKE receiver (fig. 1, 10) designed to synchronize with the delay or offset yielding the strongest finger energy for the multipath component being tracked (col. 2, lines 47-52). Because Basso discloses this synchronization method lead to more effective use of the receiver fingers according to the principles of the present invention tends to increase the multipath diversity of the receiver and to improve the average SNR of the receiver (col. 4, lines 33-36), it would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Basso into the invention of Arslan.

Allowable Subject Matter

5. Claims 6, 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

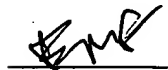
Art Unit: 2611

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 1:00PM-9:30PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erin M. File



1/5/2007



MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER